Articles

**Study on the Effect of Severity of Maternal Iron Deficiency Anemia on Regulators of Angiogenesis in Placenta**

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**Abstract**

**Aims:** In this study, we hypothesized that maternal anemia leads to altered expression of angiogenic proteins vascular endothelial growth factor (VEGF), placental growth factor (PLGF), nitrotyrosine (NT) residues, and endothelial nitric oxide synthase (e-NOS) in the placenta. Hence, we study the expression of the abovementioned proteins in the placentas of mothers with different grades of anemia. **Materials and methods:** Our study was conducted in 48 pregnant women (36–40 weeks of gestation), who were divided into four groups—normal, mild, moderate, and severe anemia. After delivery, the expression of the angiogenic proteins was studied in their placentas by immunohistochemistry. **Results:** In our study, 58.3% of the pregnant women were anemic, among which 20.83% had mild anemia, 18.75% had moderate anemia, and 18.75% had severe anemia. Immunohistochemical staining intensity for VEGF, PLGF, NT residues, and e-NOS proteins was observed to be higher in the placentas of anemic women when compared with the non-anemic women. **Conclusion:** Our study showed that there is an increased expression of angiogenic proteins in the placentas of anemic mothers, which probably is an adaptive response leading to changes in placental vessels.

**Keywords:**

* [anemia](https://www.tandfonline.com/keyword/anemia)
* [endothelial nitric oxide synthase (e-NOS)](https://www.tandfonline.com/keyword/endothelial+nitric+oxide+synthase+%28e-NOS%29)
* [iron deficiency](https://www.tandfonline.com/keyword/iron+deficiency)
* [NT residues](https://www.tandfonline.com/keyword/NT+residues)
* [pregnancy](https://www.tandfonline.com/keyword/pregnancy)
* [placental growth factor (PLGF)](https://www.tandfonline.com/keyword/placental+growth+factor+%28PLGF%29)
* [vascular endothelial growth factor (VEGF)](https://www.tandfonline.com/keyword/vascular+endothelial+growth+factor+%28VEGF%29)

**Disclosure statement**

No potential conflict of interest was reported by the authors.